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DECEMBER 1991

The Federally Mandated Longline Fishing Log Collection System in the Western Pacific

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2570 Dole Street
Honolulu, Hawaii

Robert A. Dollar and Stacey S. Yoshimoto

Honolulu Laboratory
Southwest Fisheries Science Center
National Marine Fisheries Service, NOAA
2570 Dole Street, Honolulu, Hawaii 96822-2396

ADMINISTRATIVE REPORT H-91-12

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Southwest Fisheries Science Center
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Robert A. Dollar and Stacey S. Yoshimoto

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NOT FOR PUBLICATION

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INTRODUCTION

Hawaii's longline fishery has experienced a period of dramatic growth: The number of longline vessels has quadrupled from approximately 37 vessels in 1987 to 156 vessels by the close of 1991. Initially, the Western Pacific Regional Fishery Management Council's (WPRFMC) fishery management plan (FMP)[1] for pelagic species relied on shoreside monitoring by the National Marine Fisheries Service (NMFS) for longline off-loading data, and on the Hawaii Division of Aquatic Resources (HDAR) commercial fishing catch reports. However, with the dramatic expansion of the fishery, the rise in interaction disputes between the longliners and various small trollers and handliners, as well as reports of interactions between the longline vessels operating in the Northwestern Hawaiian Islands (NWHI) and endangered Hawaiian monk seals (see Table 1 for scientific names), the WPRFMC voted in June 1990 to implement a Federal logbook system for domestic longliners operating in the western Pacific region. The proposal was based on the recommendation (dated 7-8 May 1990) of the WPRFMC's Pelagic Plan Monitoring Team in its annual report on the fishery. The logbook system would consist of two parts: detailed information on fishing effort and catch, and reports on any interactions with endangered or protected marine animals. Coincident with the logbook requirement was the implementation of Federal permits for longline vessels and observer coverage for longline vessels operating within 50 nmi of the NWHI north of and including French Frigate Shoals.

This report describes the federally mandated daily longline fishing log collection system and the methods used for assimilating and analyzing the data, and presents some typical results.

REGULATIONS

The logbook requirement was one of a suite of new Federal regulations on the longline fishery in 1990 and 1991, including:

1. Emergency regulations (27 November 1990-25 May 1991).

685.4	Fishing logbooks required.
685.9	General permits required.
695.10	Official identification number required on vessels.

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[1]The Pelagic Species FMP was authorized under the Magnuson Fishery Conservation and Management Act of 1976 (MFCMA) which regulates the fisheries for swordfish, marlin, and other non-tuna pelagic species within the U.S. Exclusive Economic Zone (EEZ) from 3 to 200 nmi offshore of American Samoa, Guam, Hawaii, the Northern Mariana Islands, and U.S. possessions in the western Pacific (e.g., Wake, Johnston Atoll; see Appendix A).

685.11 Observers required for vessels fishing in the NWHI study zone.

2. Emergency regulations (15 April-14 July 1991, extended to 12 October 1992 and superseding above).

685.2 Area closure of NWHI protected species zone within 50 nmi of all NWHI (Appendix B).

3. Emergency regulations (23 April-9 October 1991).

685.15 Notice to fishermen, 1 July 1991, limited entry permits required.

4. FMP Amendment 2. Final Rule (26 May 1991).

Mandatory State reporting, fishing logbooks, transshipment logbooks (Appendix C), permits, vessel identification, longline float identification, notification of landings and transshipments (effective 30 September 1991), and protected species zone (16 July 1991).

5. Emergency regulations (14 June-12 September 1991, extended to 11 December 1991).

685.2 Main Hawaiian Islands, longline fishing prohibited area. Notice to fishermen 1 July 1991 (see current longline regulations in Appendix D).

6. FMP Amendment 3.--Final Rule (effective 14 October 1991).

Longline fishing closure within 50 nmi of banks and islands in the NWHI as well as corridors connecting those NWHI more than 100 nmi apart (Appendix B).

7. Emergency regulations modification (12 July-9 October 1991).

685.15 Limited entry permits (revised eligibility criteria for refitted vessels, one-time transfer of permit with sale of vessel, ownership by a corporation defined); permits granted to "active" NWHI lobster vessels.

8. Emergency regulations modification (effective 13 October 1991).

Closure of NWHI protected species zone (Appendix B).

9. FMP Amendment 4. Final Rule (effective 10 October 1991).

Hawaii longline fishery 3-year moratorium to April 1994 (to possibly include mandatory vessel-tracking devices on all domestic longliners).

10. FMP Amendment 5. Final Rule (effective date, 3 March 1992.

    Longline prohibited fishing area around the main Hawaiian Islands (within 50 nmi of Hawaii and Maui and 75 nmi of Kauai County and Oahu; Appendix E).

MONITORING PROCEDURES

With the new logbook regulation (Pelagic FMP Amendment 2), fishing logbooks (see sample log sheet in Appendix F) must be maintained daily by all U.S. domestic longline vessels operating in the western Pacific (see logbook instructions in Appendix G) and submitted to the NMFS-Southwest Region (SWR) within 72 hours after the catch is off-loaded. Vessels that do not comply are subject to possible fines by NMFS enforcement personnel.

The Fishery Monitoring and Economics Program (FMEP) of the Honolulu Laboratory has been assigned the task of monitoring all domestic longline vessels fishing in Hawaii. The FMEP collects, processes, and summarizes the vessels' daily catch logs. At present, domestic longline vessels operating out of American Samoa, Guam, and the Northern Mariana Islands report directly to the NMFS SWR. These data are then transferred to the FMEP.

Prior to the new Pelagic FMP regulations, monitoring vessels in the longline fishery was difficult and complicated. The State of Hawaii commercial fishing catch reports could have provided detailed information on longline fishing practices, but these reports suffered from two deficiencies: first, many vessels in the fleet did not file the reports with the State, and second, the reports were filed as complete trip reports, rather than as day-to-day activity reports. The FMEP's monitoring program was based on voluntary access to fish landings records by the major buyers of longline-caught fish. The FMEP's program also lacked detailed daily fishing information. Although it covered a high percentage of longline landings, as the fishery grew, the problems of tracking the fishery with such a voluntary system became more apparent. The WPRFMC's Pelagic Plan Monitoring Team concluded that a mandated Federal longline logbook system was necessary to monitor the rapidly developing fishery.

To monitor the longline fleet and implement the permit requirement, all U.S. domestic longline fishing vessels operating in the western Pacific were given Longline Fishing Vessel Permit Applications (Appendix H) during November-December 1990. Approximately 145 general longline permits (Appendix I) were issued, along with a letter from the SWR Pacific Area Office (PAO; Appendix J). By the first week of January 1991, 155 vessels had been issued general permits and logbooks and informed of their responsibilities as mandated by Federal law.

On 23 April 1991, Federal "limited entry" permits (Appendix K) were required in addition to the general longline permits (item 7 in the FMP regulations listed earlier). Presently, 185 vessels have general permits; of these, 160 longline vessels have limited entry permits, and 13 have pending permit applications.

CATCH, EFFORT, AND PROTECTED SPECIES INFORMATION

Under the new federal regulations (Pelagic FMP Amendment 2), operators of longline vessels must maintain on board an accurate and complete fishing logbook for each day of each fishing trip, which must include the following detailed information on the daily fishing catch and effort (Appendix F):

* Name of fishing vessel;
* Permit number of fishing vessel;
* Date, time, and latitude and longitude of the location at which the set of the longline is begun;
* Date, time, and latitude and longitude of the location at which hauling of the longline is begun;
* Number of hooks set;
* Number of light sticks used;
* Sea surface temperature;
* Number of billfish, tuna, oceanic sharks, and associated fish (by species) caught and released per day;
* Number (by species) of protected species (not including marine birds) sighted in the area of the gear per day;
* Number (by species) of protected species released or lost alive and not apparently injured;
* Number (by species) of protected species released or lost alive but apparently injured;
* Number (by species) of protected species released or lost dead;
* Signature of the fishing vessel operator; and
* Date of signature.

The primary purpose of this information is to ensure adequate monitoring of conditions in the fishery by collecting data on catch and effort needed for fishery stock assessments and for monitoring interactions between the longline fishery and endangered or threatened species.

DAILY LOGBOOK COLLECTION PROCEDURES

Daily collection procedures require FMEP technicians to visit the piers where most of the fishing vessels are docked. The home port of most of the longline fishing fleet in Hawaii is at Honolulu's Kewalo Basin and Piers 17, 35, 37, 39, and 40. These piers are located within 10 minutes of each other. A few (N = 12) vessels are based at other Hawaiian islands (Hawaii, Maui, and Kauai), and some vessels (n = 3) are based in Guam and

American Samoa. These vessels are required to mail their logs to the SWR PAO in Honolulu.

To collect the daily logbook data and monitor the longline fleet, routine procedures have been established by the FMEP:

1. The SWR PAO is contacted each morning for information on vessels which have just arrived within the last 24 hours (vessels are required to call within 12 hours; see Appendix L), and a logbook "pickup" list (Appendix M) is generated.

2. A vessel inventory list (Appendix N) is also generated to record the status of all vessels (e.g., in port, out fishing, or just arriving in port).

3. a) Log sheets are obtained from vessels that have off-loaded or just arrived.

   b) New logbooks are issued as needed.

   c) Logs are spot-checked for accuracy and completion.

   d) Trip type is determined by questioning the captain or deck boss which species was targeted (swordfish, tuna, or mixed). When the captain is unavailable or the log is mailed in, the trip type is determined by analyzing the times of the sets, the number of light sticks used, the type of gear used, the area fished, and the previous history of trip types for that particular vessel.

   e) If no one is on board, a notice is left informing the owner or operator of the visit and where to mail the logs (Appendix O).

4. Inquiries are made concerning any interactions between vessels with endangered or protected species. If interactions are reported, the captain is consulted about the circumstances. These reports are provided to NMFS protected species personnel.

PROCEDURES FOR EDITING LOGBOOK DATA

Once the logbooks are obtained, the FMEP staff edits each log sheet to ensure its accuracy and the proper completion of all questions. See Appendix P for sample of a completed log sheet. Editing procedures are as follows:

- Logs are brought back to the Honolulu Laboratory by FMEP personnel.

- Logs mailed to the SWR PAO are stamped with the date received and then submitted to FMEP for processing.

- Vessel name, month of landing, trip type, and sequential trip number are logged.

- Date sequence and number of sets are checked. If the vessel catches no fish in any particular set, the set is considered a "zero catch set" but is otherwise processed like any other log sheet.

- The first page of each vessel's log is stamped with a sequential longline trip number. Trip numbers start at 1 beginning each calendar year. Month and year of landing are also recorded in red on the first page, below the trip number.

- Vessel names are checked for correct spelling and for legibility. The vessel's permit number also is verified.

- Area fished is checked and should be logged in degrees and minutes (no seconds), latitude and longitude.

- Time should be in military time (24-hour clock) Hawaii standard time.

- Sea temperature is checked and should be recorded to the nearest 0.1°F (e.g. 73.6°F).

- Numbers of individuals kept and released are checked for each particular species. Tally marks in each species total and number released column should total correctly.

- Entries are checked for mislogging listed species in "other" category by using a different common name (e.g., "shutome" should be in swordfish column, "monchong" in miscellaneous other).

- All log sheets with marine mammal interactions are duplicated and given to the Protected Species Investigation. All copies are stamped CONFIDENTIAL.

- Log sheets are filed in legal-sized folders stamped CONFIDENTIAL. Trip number and pickup date are entered in upper right corner of the folder.

- Folders with logs are then submitted to Fishery Data Management Program (FDMP) for keypunching.

Logbook Catch and Effort Computer System

The purpose of any computer system is to minimize the labor and time involved in various tasks. The Honolulu Laboratory's Longline Logbook Computer System attempts to do this, as

illustrated in Figure 1. The system provides a final check to ensure that data have been edited and keypunched correctly. It can calculate various fishing parameters in summarizing the data and saves time by storing the summarized data, thus eliminating the need for recalculating previous results. The Longline Logbook Computer System is a dBASE IV menu-driven system which has three main functions: (1) checking and editing keypunched data; (2) processing data and producing various data summaries; and (3) providing an environment for users to perform these tasks with ease and on time.

Checking and Editing Data

After being keypunched and verified by FDMP, the logbook catch and effort data are imported into a temporary data base, which is then run through a checking program that prints out possible data errors. After actual errors are corrected, the temporary, edited data base is appended to the permanent edited data base. The computer system also checks for possible data keypunching errors and alerts the data editor to the following:

1. A latitude degree reading which is less than 10 or greater than 40.

2. A south latitude.

3. A longitude degree which is less than 140.

4. An east longitude.

5. A number of hooks or light sticks for a set that is less than 200 or greater than 2,000.

6. A trip number or set which already exists in the permanent data base. (This occurs when portions of a trip's logs are received and entered at different times or when a vessel has two separate trips with the same haul date.)

7. A number of individuals kept or released for a species that is greater than 50 for a particular day.

Processing Data and Producing Data Summaries

After all data are edited, summary files can be produced by general areas consisting of, the number of sets, number of hooks, number caught. The summary files make processing of reports faster and reproducible. The general areas categorized are the main Hawaiian Islands (inside the EEZ of the Hawaiian Islands and east of 161°W); the NWHI (inside the Hawaii 200-nmi EEZ and west of 161° W); the 200-nmi EEZs of American Samoa, the Northern Mariana Islands, Guam, Howland and Baker Islands, Johnston Atoll,

Kingman Reef and Palmyra Atoll, and Wake Island; and outside of any of the above general areas (Appendix A). Digitized maps and computer programs were used to calculate latitude and longitude ranges for each EEZ. Because the digitizing process was not completely accurate, calculated summaries should be taken as estimates.

After the summary files are produced, summary reports can be generated. Summaries can be for a specific area or for a combination of all areas. Fishing areas are designated by the latitude and longitude of gear deployment rather than retrieval. The top portions of Tables 2 and 3 summarize trip and species catch information reported by longliners in January-June 1991 for all areas combined. Summary reports are produced quarterly but are treated as preliminary results because trips may extend past the end of the quarter or logs may arrive late by mail or be held by NMFS enforcement personnel. All summaries are generated by date of haul; this presents a problem because many trips extend over two quarters (e.g., a trip from 21 March 1991 to 10 April 1991). Therefore, if the number of trips for one quarter were added to the number of trips for the next, the total number of trips would be overestimated. Thus, catch per trip from this summary may be meaningless, and catch per 1,000 hooks set is more valid.

These summaries are provided within 45 days of the end of each quarter to other NMFS offices and the WPRFMC. Summary information is also provided to fishermen and processors periodically.

TYPICAL RESULTS

Data received and summarized for the first half of 1991 reveal that during the first quarter (January-March 1991), there were 559 trips made by 130 vessels fishing within the main Hawaiian Islands EEZ, the NWHI EEZ, areas outside the EEZ, and areas in other U.S. territories (Table 2). During the second quarter (April through June 1991), 549 trips were completed by 128 longline vessels within the same areas (Table 3).

Total effort was 3.46 million hooks set in the first quarter, compared to 3.57 million hooks in the second quarter. Though little difference can be seen in total effort, effort outside the Hawaii EEZ increased substantially from 819,680 hooks set in the first quarter to 1.33 million hooks in the second quarter.

Billfish (e.g., blue and striped marlins) catch per unit effort (CPUE; number caught per 1,000 hooks) in the first quarter was 8.9 compared to 11.0 for second quarter. The CPUE for other pelagic management unit species (i.e., mahimahi, wahoo, and sharks) increased from 6.6 to 8.2, and CPUE for tunas declined

from 6.7 to 4.4 during the same time period. Figure 2 shows species composition (by number caught) for the first and second quarters.

Accuracy of Data

A number of problems have become apparent with logbook data quality. Although cooperation among vessel owners and captains in the logbook program generally has been good, there were several initial problems. Primarily, logs were not completed and submitted on time or were completed improperly (e.g., only partially completed or with misidentified species).

A sample of logbook data for January 1991 was reviewed by FMEP staff. "Poor" or "questionable" data were defined as being a substantial deviation between the number of fish of each individual species logged as "kept" and the number monitored on landing by FMEP. Out of 96 vessels checked, 50% of the catch logs received showed accurate data (as determined by matching data from FMEP market data), 24% had poor data, and 26% had questionable data of various types. Similar analysis for May 1991 showed that out of 78 vessels checked, 57.7% of the logbook data were poor or questionable. However, preliminary summary reports for August-September 1991 showed improvements. For 113 longline trips during this period, 78% recorded "good" data while 22% still had significantly "poor" data.

One of the most evident problems apparently has been vessel operators not being able to correctly identify different types of billfish and other pelagic species. To address this problem, the FMEP developed and distributed laminated English, Korean, and Vietnamese versions of a pelagic species identification guide (Appendix Q). This guide has been popular, well received, and useful in helping fishermen identify the major pelagic fishes. However, receiving consistently good data is still a problem. Other problems, such as operators not completing their log sheets or completing them improperly, are being resolved through direct personal contact with individual vessel owners and captains.

The SWR PAO is also working on a similar identification guide for marine mammals, but there is a need for further education of longline fishermen in order for FMEP to obtain more accurate information. For example, the Tuna/Porpoise Management Program in San Diego, California, requires that all fishermen applying for permits to fish in protected areas attend specialized workshops. These workshops examine identification of impacted species, procedures for releasing any animals caught in gear, gear requirements, and techniques to minimize interactions. Such a program is already required for bottomfish fishery participants in the NWHI.

INTERACTIONS WITH ENDANGERED AND PROTECTED SPECIES

Endangered and protected species interactions are summarized in Table 4 using data received from longline vessel logs from November 1990 through June 1991. These data are hand-tallied and edited by FMEP personnel and comprise a separate, confidential data base.

These data raise concerns that many vessels may be underreporting their interactions with endangered and protected species. (This is fairly evident since only 40 of 137 vessel trips completed during this period reportedly had any type of interactions with protected species, whereas data from the 10 observer trips indicated that 6 had interactions.) It has also been the general consensus among shoreside monitoring personnel, as well as observers returning from trips aboard vessels fishing in the NWHI and mid-Pacific, that more accurate reporting of interactions with protected and endangered species should be emphasized. This was very obvious when fishermen on some observer trips could not identify the marine animals they encountered. Improved logging of protected species interactions is important not only from a regulatory point of view but also for scientific purposes in determining the range and prevalence of the protected species. Past experience has shown that notices mailed or handed out are not usually read or understood. Language barriers are also a problem due to the substantial number of vessels captained by people of Vietnamese or Korean descent (N = 91) participating in the fishery. There also seems to be a good deal of resistance by the fishermen in dealing with anything labeled "U.S. Government." Again, a person-to-person approach appears to work best.

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CITATIONS

Dollar, R. A.
1991. Summary of swordfish longline observations in Hawaii, July 1990-March 1991, Southwest Fish. Cent. Honolulu Lab., Natl. Mar. Fish. Serv., NOAA, 2570 Dole St., Honolulu, HI 96822-2396. Southwest Fish. Cent. Admin. Rep. H-81-09, 13 p.

Table 1.--List of common and scientific names of fishes and endangered or protected species commonly encountered by longliners.

Common name	Scientific name
Pelagic Management Unit Species	
Swordfish	*Xiphias gladius*
Blue marlin	*Makaira mazara*
Black marlin	*Makaira indica*
Striped marlin	*Tetrapturus audax*
Shortbill spearfish	*T. angustirostris*
Sailfish	*Istiophorus platypterus*
Mahimahi	*Coryphaena hippurus*
Wahoo (ono)	*Acanthocybium solandri*
Blue shark	*Prionace glauca*
Thresher (big eye)	*Alopias superciliosus*
Mako (short fin)	*Isurus oxyrinchus*
White tip (oceanic)	*Carcharhinus longimanus*
Tiger shark	*Galeocerdo cuvieri*
Miscellaneous sharks	Carcharhinidae, Alopiidae, Sphynidae and Laminidae
Tunas	
Bigeye tuna	*Thunnus obesus*
Yellowfin tuna	*T. albacares*
Albacore	*T. alalunga*
Kawakawa	*Euthynnus affinis*
Skipjack tuna	*Katsuwonus pelamis*
Miscellaneous	
Moonfish	*Lampris regius*
Lancetfish	*Alepisaurus* spp.
Walu	*Lepidocybium flavobrunneum*
Barracuda	*Sphyraena barracuda*
Brown stingray	*Dasyatis violacea*
Endangered or Protected Species	
Hawaiian monk seal	*Monachus schauinslandi*
Humpback whale	*Megaptera novaengliae*
Killer whale	*Orcinus orca*
False killer whale	*Pseudorca crassidens*
Bottlenose dolphin	*Tursiops truncatus*
Rough-toothed dolphin	*Steno bredanensis*
Spinner dolphin	*Stenella longirostris*
Green turtle	*Chelonia mydas*
Olive ridley turtle	*Lepidochelys olivacea*
Hawksbill turtle	*Eretmochelys imbricata*
Leatherback turtle	*Dermochelys coricea*
Laysan albatross	*Diomedea immutabilis*
Black-footed albatross	*D. nigripes*
Brown booby	*Sula leucogaster plotus*

Table 2.--Logbook summaries from January through March 1991 (all areas).

Trip Information

Number of vessels	130
Number of trips	559
Number of sets	3,379
Number of hooks set	3,460,842
Number of lights sticks used	800,190
Minimum hooks per set	80
Maximum hooks per set	2,600

	Species catch information		
Species class	No. kept	No. caught	No. caught per 1,000 hooks
Billfishes			
Blue marlin	3,029	3,093	0.89
Swordfish	17,603	18,968	5.48
Striped marlin	6,127	6,374	1.84
Other	2,063	2,188	0.63
Total	28,822	30,623	8.85
Other Pelagic Management Unit Species			
Mahimahi	8,308	8,547	2.47
Wahoo (Ono)	356	371	0.11
Sharks	1,266	13,969	4.04
Total	9,930	22,887	6.61
Tunas			
Albacore	2,159	2,256	0.65
Bigeye tuna	15,210	15,742	4.55
Yellowfin tuna	3,079	3,231	0.93
Other	2,028	2,067	0.60
Total	22,476	23,296	6.73
Miscellaneous	1,805	1,841	0.53
Date and time of summmary:		09/09/91 (21:28:00)	

Table 3.--Logbook summaries from April through June 1991 (all areas).

Trip Information

Number of vessels	128
Number of trips	549
Number of sets	3,909
Number of hooks set	3,574,118
Number of light sticks used	1,157,971
Minimum hooks per set	180
Maximum hooks per set	2,400

	Species catch information		
Species class	No. kept	No. caught	No. caught per 1,000 hooks
Billfishes			
Blue marlin	2,734	2,976	0.83
Swordfish	25,398	26,700	7.49
Striped marlin	5,714	6,287	1.76
Other	3,314	3,397	0.95
Total	37,160	39,360	11.04
Other Pelagic Management Unit Species			
Mahimahi	11,346	11,612	3.26
Wahoo (Ono)	1,039	1,048	0.29
Sharks	1,554	16,573	4.65
Total	13,939	29,233	8.20
Tunas			
Albacore	3,878	3,954	1.11
Bigeye tuna	5,959	6,094	1.71
Yellowfin tuna	4,489	4,541	1.27
Other tuna	1,017	1,024	0.29
Total	15,343	15,613	4.38
Miscellaneous	1,584	1,603	0.45
Date and time of summmary:		09/09/91 (22:02:10)	

Table 4.--Interactions with endangered and protected species reported by Hawaii's longline fleet, November 1990 through September 1991. Numbers indicate animal count, not number of sets with interactions.

	Observed or actual interaction						
	Monk seals		Turtles		Whales/porpoises		Birds
Month	SIAG	RAID	SIAG	RAID	SIAG	RAID	RAID
			1990				
Nov	2*	0	1	0	21	0	3
Dec	0	0	2	1	45	0	0
			1991				
Jan	0	0	1	3	24	0	1
Feb	0	0	2	2	12	0	14
Mar	0	0	3	8	0	2	6
Apr	0	0	2	7	3	1	12
May	0	0	3	8	7	1	12
Jun	3*	0	9	10	208	0	33
Jul	0	0	6	1	5	0	1
Aug	0	0	21	9	108	3	2
Sep	0	0	2	2	131	0	29
Totals	5*	0	52	51	564	7	113

Total number of sets with reported interactions = 181.
Total number of vessels reporting interactions = 59.

SIAG = Species sighted in area of longline gear.
RAID = Retrieved alive, injured, or dead.
* = Not positively identified as monk seals.

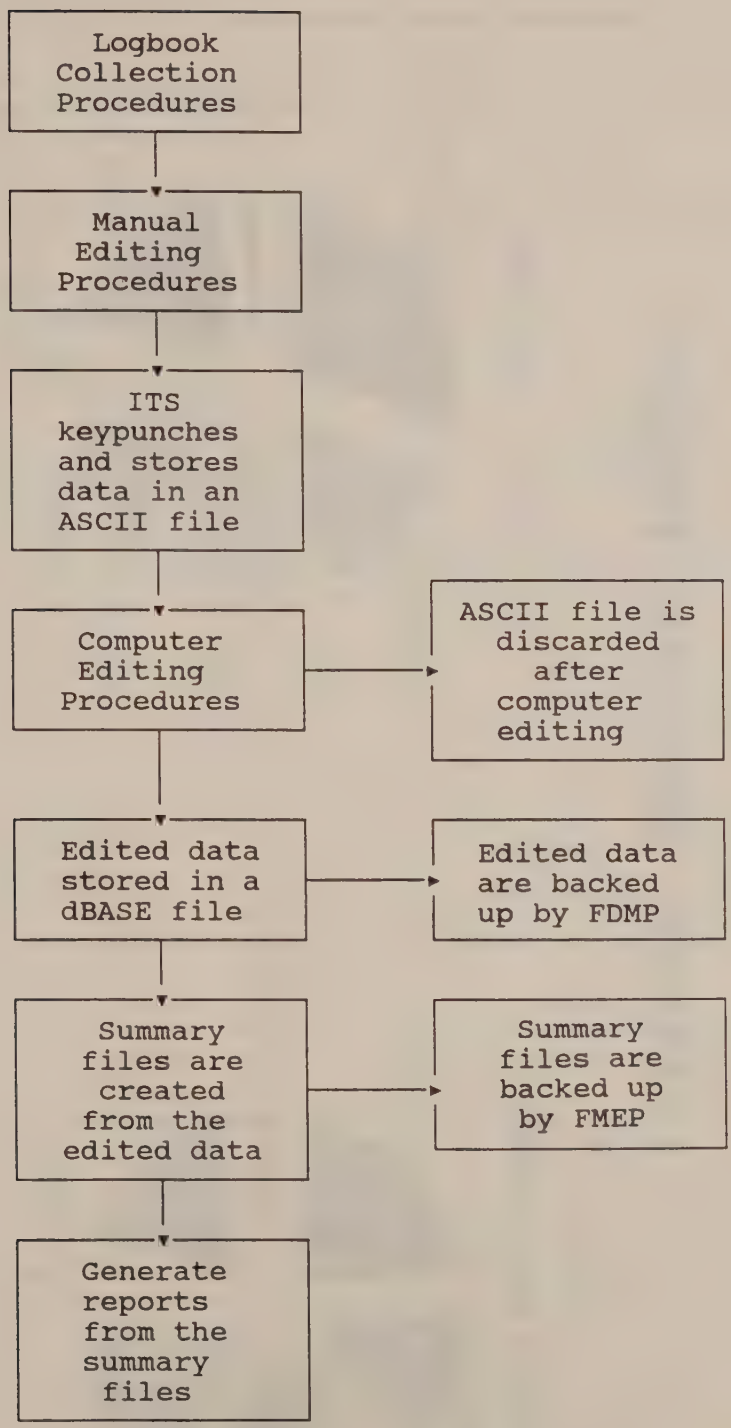
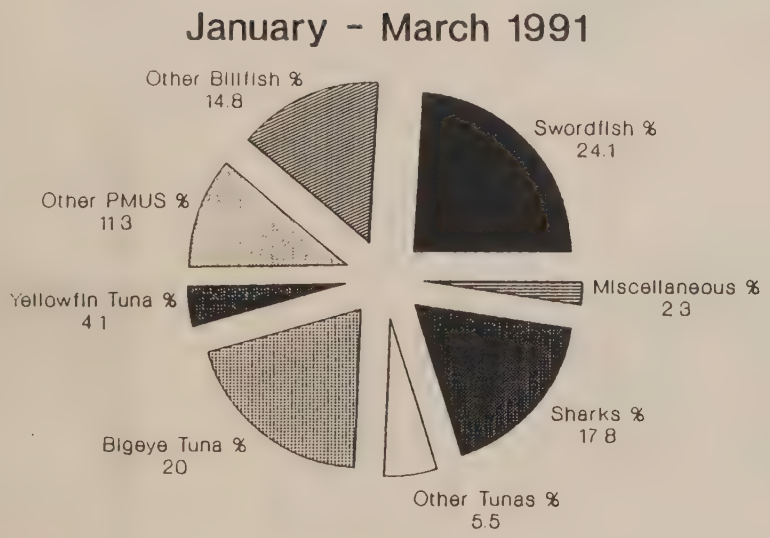

Logbook Collection Procedures
Manual Editing Procedures
ITS keypunches and stores data in an ASCII file
Computer Editing Procedures
ASCII file is discarded after computer editing
Edited data stored in a dBASE file
Edited data are backed up by FDMP
Summary files are created from the edited data
Summary files are backed up by FMEP
Generate reports from the summary files

Figure 1.--Main flowchart for the Longline Logbook System.

Logbook Summary Report



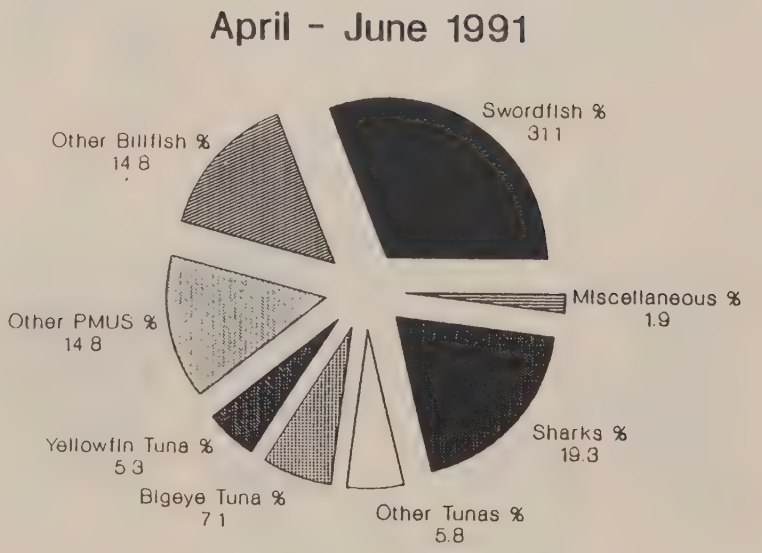
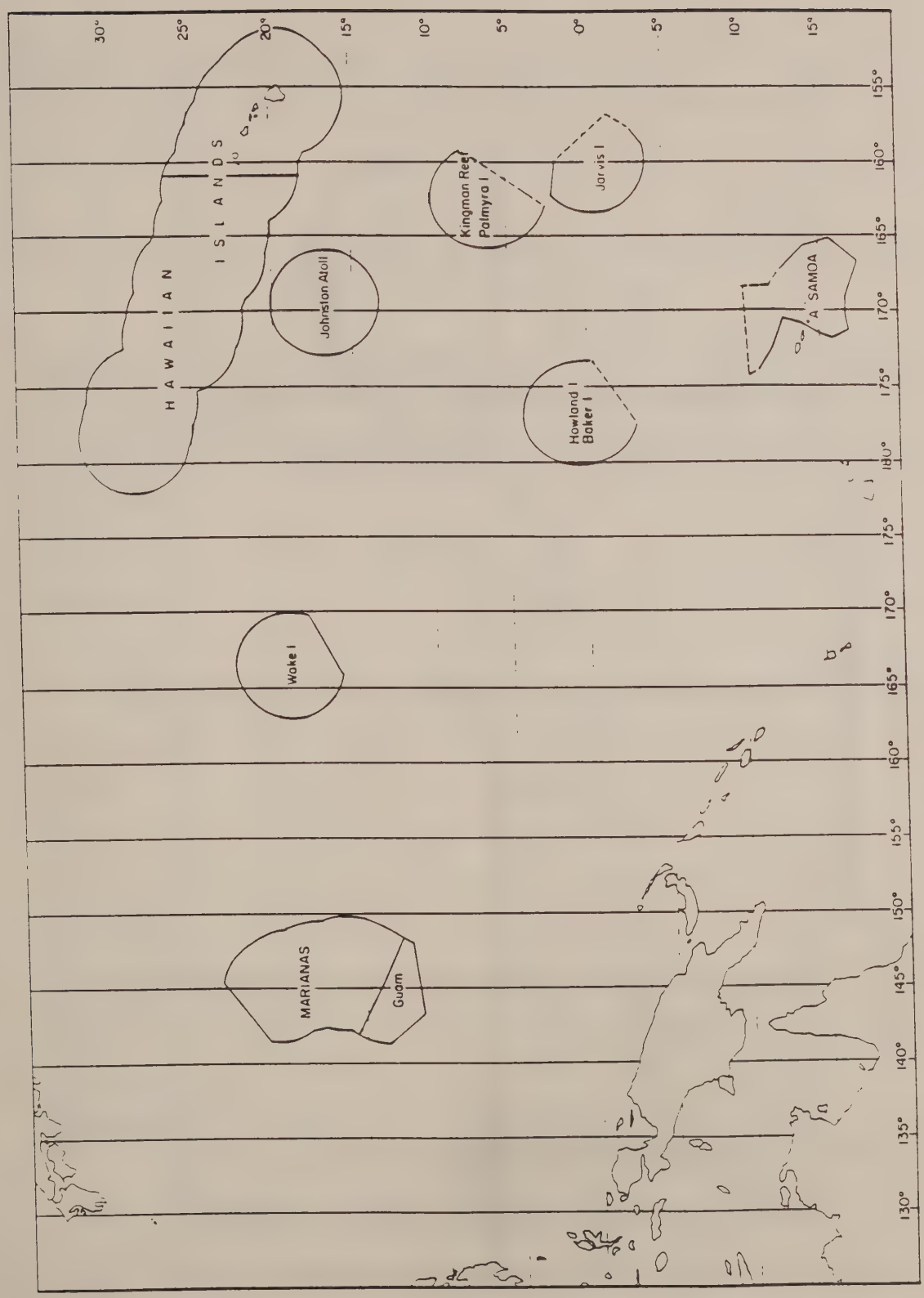
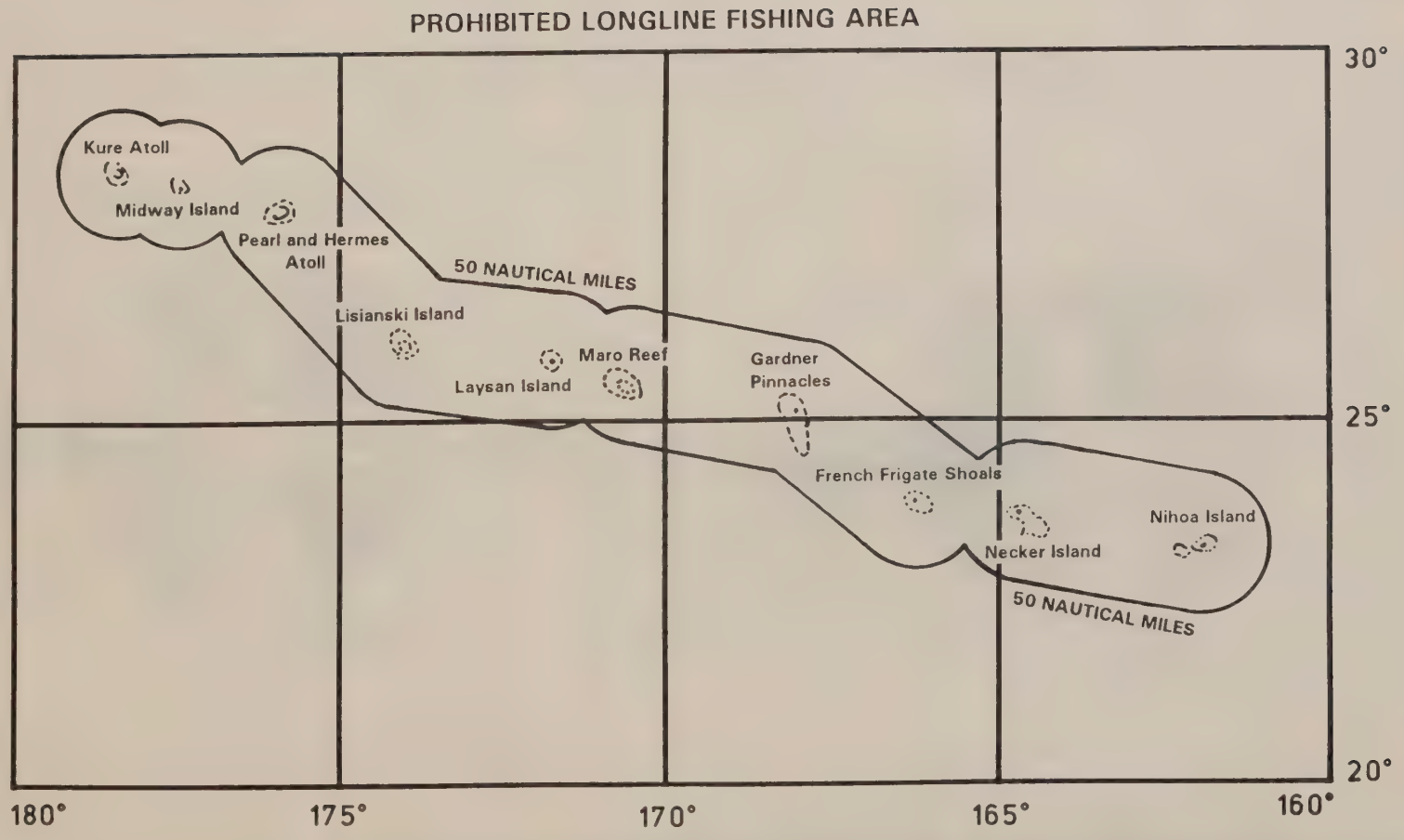


Figure 2.--Percent species composition (by number).



Appendix A.--Exclusive economic zones (3-200 nmi offshore around the Hawaiian Islands and U.S. possessions).



Appendix B.--Closure zone prohibited longline fishing area within 50 nmi of banks and islands of the Northwestern Hawaiian Islands.

Appendix C.--Transshipment log.

OMB NO.
Expires:

PELAGIC FISHERIES OF THE WESTERN PACIFIC REGION

TRANSSHIPMENT LOG - LONGLINE FISHING

VESSEL_____PERMIT NO._____
(Transshipment)

VESSEL_____ RADIO CALL SIGN_____DATE_____
NO. DAYS FISHED_____ AVE. NO. HOOKS FISHED/DAY_____
GENERAL CATCH AREA_____

SPECIES	NUMBER TRANSSHIPPED	TOTAL WEIGHT TRANSSHIPPED
BLUE MARLIN		
STRIPED MARLIN		
BLACK MARLIN		
SAILFISH		
SPEARFISH		
SWORDFISH		
.....		
MAHIMAHI		
WAHOO		
MOONFISH		
.....		
BLUE SHARK		
MAKO SHARK		
THRESHER SHARK		
ALBACORE TUNA		
BIGEYE TUNA		
YELLOWFIN TUNA		
OTHER TUNA		

SIGNATURE_____ DATE_____
(Operator of Transshipment Vessel)

Appendix D.--Current longline regulations.

WESTERN PACIFIC REGIONAL FISHERY MANAGEMENT COUNCIL

Notice to Fishermen
July 1, 1991

Effective Dates for Emergency Management Actions

- Closure to longline fishing within 50 nm of the banks and islands in the Northwestern Hawaiian Islands -- "Protected Species Zone" (see map).

  Effective: April 15, 1991 through July 14, 1991. Probable extension through October 12, 1991.

- Closure to longline fishing within 50 nm of Hawaii and Maui county and within 75 nm of Kauai county and Oahu.

  Effective: June 14, 1991 through September 12, 1991. Probable extension through December 11, 1991.

  Note: The Council intends to make the above two actions permanent.

- Moratorium on new entry into longline fishery in the Hawaiian EEZ (eligibility criteria on back).

  Effective: April 12, 1991 through July 11, 1991. Probable extension through October 9, 1991.

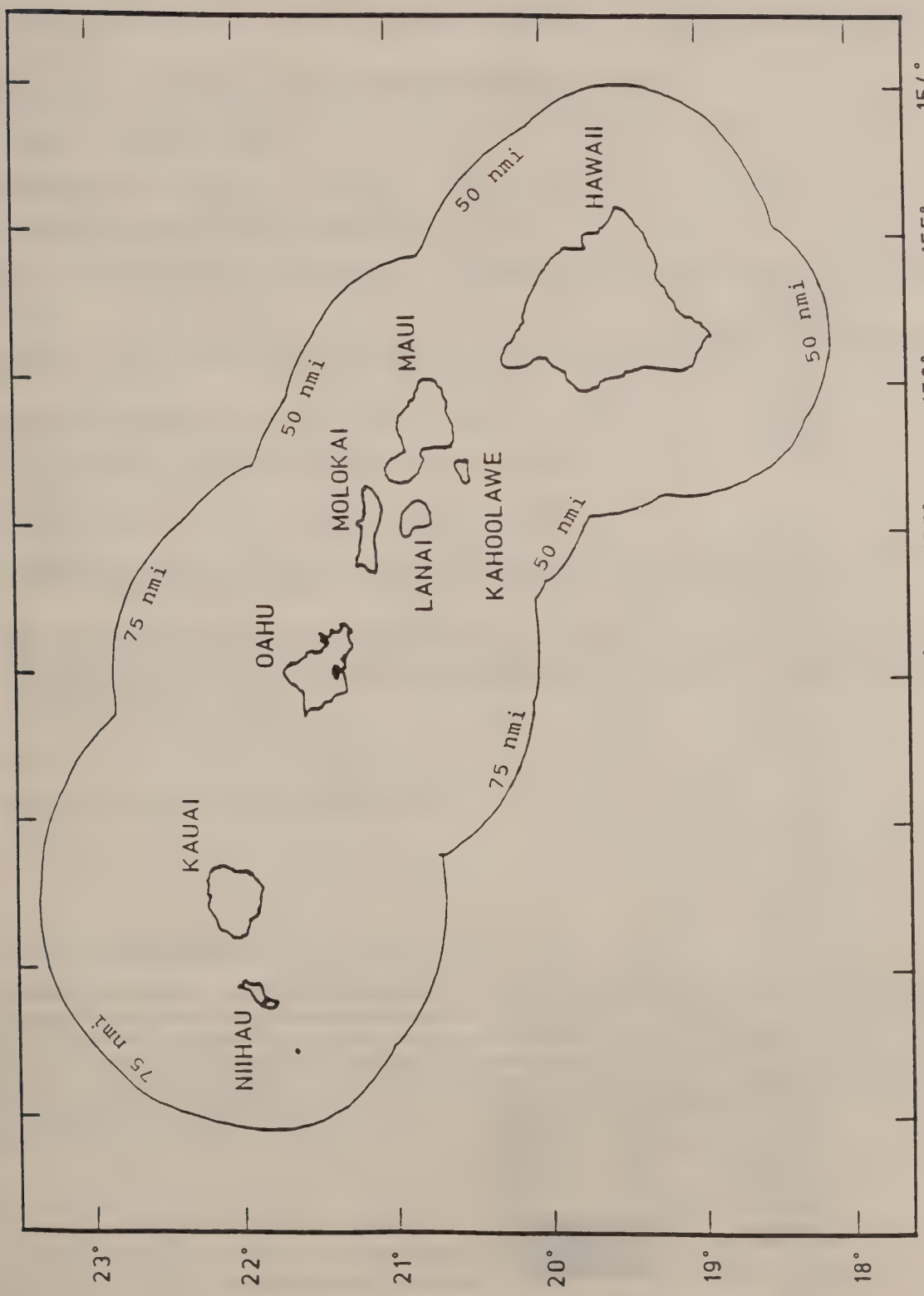
  Note: The Council intends to make the above action effective for three years.

- Closure to lobster fishing in the Northwestern Hawaiian Islands.

  Vessels may not have lobster fishing gear in the NWHI after effective date.

  Effective: May 8, 1991 through August 12, 1991. Possible extension through November 10, 1991.

COUNCIL AUTHORIZED BY THE FISHERY CONSERVATION AND MANAGEMENT ACT OF 1976 (P.L. 94-265)
1164 BISHOP STREET, SUITE 1405, HONOLULU, HAWAII 96813 USA TELEPHONE (808) 523-1368 TELEX 743-1871 FAX (808) 526-0823



Appendix E.--Closure zone. Prohibited longline fishing area around the main Hawaiian Islands (within 75 nmi of Kauai and Oahu, and 50 nmi of Maui and Hawaii).

Appendix F.--Longline log sheet.

DAILY LONGLINE FISHING LOG

Vessel_____ Permit No._____ Date of Haul___/___/____

Set: Time_____ Location_____
Latitude/Longitude

Haul: Time_____ Location_____
Latitude/Longitude

No. of Hooks Set_____ No. of Light Sticks Used_____ Surface Temp._____

Species	Number Kept		Number Released	
	Tally	Total	Tally	Total
BILLFISHES Marlin, Blue				
Marlin, Striped				
Marlin, Black				
Sailfish				
Spearfish				
Swordfish				
SHARKS Blue				
Mako				
Thresher				
Other				
MISC. Mahimahi				
Moonfish				
Wahoo				
Other				
TUNAS Albacore				
Bigeye Tuna				
Yellowfin Tuna				
Other				

PROTECTED SPECIES INTERACTION OBSERVATION

SPECIES	SIGHTED IN AREA OF GEAR		RELEASED or LOST					
			ALIVE		INJURED		DEAD	
	Tally	Total	Tally	Total	Tally	Total	Tally	Total
Dolphin								
Monk seal								
False killer whale								
Green turtle								
Leatherback Turtle								
Albatross	[redacted]							
Booby								
Others								

I certify that the above information is complete and true to the best of my knowledge.

Captain _____ Date_____

Appendix G.--Instructions for completing longline logbook.

INSTRUCTIONS FOR DAILY LONGLINE FISHING LOGBOOK

1. VESSEL: Enter name of vessel.

2. PERMIT NO.: Enter longline fishing permit number.

3. DATE OF HAUL: Enter date of haul of longline.

4. SET: Enter time (using 24 hour clock) and the latitude and longitude of the location when the longline set began.

5. HAUL: Enter time (using 24 hour clock) and the latitude and longitude of the location when longline haul began.

6. NO. OF HOOKS SET: Enter total number of hooks set.

7. NO. OF LIGHTSTICK USED: Enter total number of lightsticks used.

8. SURFACE TEMP.: Enter surface water temperature (if taken).

9. SPECIES: For each listed species, enter the numbers kept and released in the **TOTAL** columns; the **TALLY** columns are work space for your convenience in tallying the catch during haul.

10. PROTECTED SPECIES INTERACTION OBSERVATION: For each species or species category, enter in the appropriate columns the number sighted in the vicinity of the gear (not including birds) and the number released alive and uninjured, alive and injured, and dead; the **TALLY** columns are again provided for your convenience as a work space.

11. CAPTAIN: Signature of the captain.

12. DATE: Date when log is completed and signed.

Public reporting burden for this collection of information:

Completion of this report is required to obtain a benefit. The information collected is used for fishery management and research pruposes. The public reporting burden for this collection is estimated to average 60 minutes per trip, including the time to complete the daily log sheet, and submit log forms to the National Marine Fisheries Service (NMFS). Any comments you may have on this burden estimate or on any other aspect of this data collection should be sent to the Pacific Area Office, SWR, NMFS, 2570 Dole Street, Honolulu, Hawaii 96822-2396, and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503 (Attention: Paperwork Reduction Project - 0648-0214).

Appendix H.--Longline Fishing Vessel Permit Application.

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE

LONGLINE FISHING VESSEL PERMIT APPLICATION

OMB Control No. 0648-0204
Expiration Date: 9/1/93

Date Received

Permit No.

APPLICATION INFORMATION -- PLEASE PRINT

Name of Applicant (Last, First, Middle)		Telephone No.
Name of Vessel Owner (Last, First, Middle)		Telephone No.
Mailing Address of Owner	City and State	Zip Code
Operator's Name (Last, First, Middle)		Telephone No.
Operator's Mailing Address	City and State	Zip Code

PERMIT INFORMATION --- PLEASE PRINT

Primary Fishing Area	Prior Permit No.	Expiration Date of Permit
MHI ____ A.Samoa____ NWHI____ Guam _____		

VESSEL INFORMATION --- PLEASE PRINT

Vessel Name	Vessel Number	Radio Call Sign	Home Port
Gross Reg. Tons	Registered Length	Beam of Vessel	Fuel Capacity
Avg. Cruising Speed	Max. Range	Horsepower	Age of Vessel
Date Vessel Purchased	Purchase Price	Number of Crew	

FISHING INFORMATION --- PLEASE PRINT

Vessel Fish Hold Capacity (tons)	Type of Refrigeration and Capacity (tons)	
	a. Ice _____	d. Plate Freeze _____
	b. Onboard Ice Plant _____	e. Blast Freeze _____
		f. Other (specify) _____
Type and Amount of Gear	a. Longline _____	c. Bottom Longline _____
	b. Traps _____	d. Other (specify) _____

APPLICANT'S SIGNATURE _____ DATE _____

SUBMIT THIS COPY TO THE PACIFIC AREA OFFICE

Appendix I.--General permit.

Federal Longline Fishing Permit
Western Pacific Region

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

F/V ALOHA

Permit No. 100001 **Owner: John Smith**

Effective Date of Permit: January 28 - December 31, 1992

Issuing Officer: _____
for - E.C. Fullerton
Regional Director

Notice of Control Dates for Entry into the Western Pacific Longline Fisheries

Any person entering the Hawaii longline fishery who cannot document either (1) landing fish in Hawaii caught by longline gear before December 6, 1990, or (2) transshipping within the EEZ around Hawaii fish caught by longline gear before December 6, 1990, or (3) making a substantial financial investment before December 6, 1990 in longline gear for a vessel owned by that person and located in Hawaii before December 6, 1990, or (4) making a substantial financial investment before June 22, 1990 to construct or purchase a new vessel and intended at the time of the investment that the vessel would be used in Hawaii's longline fishery upon completion of construction or delivery of the purchased vessel, or (5) making a substantial financial investment before June 22, 1990 to refit a vessel for participation in Hawaii's longline fishery, and intended at the time of the investment that the vessel would be used in the fishery upon completion of the refitting, or (6) owning the vessel which held a permit for 1990 under Federal Code of Regulations § 681.4 and which in 1990 landed in Hawaii lobsters that were harvested from the Northwestern Hawaiian Islands, or (7) obtaining a replacement vessel for a vessel that was sunk or declared unseaworthy in the twelve months prior to April 23, 1991, and for which the owner would have been eligible for a limited entry permit, or (8) obtaining through transfer of ownership from an immediate family member (parent, spouse, child, sibling, or adopted child) a vessel for which the previous owner would have been eligible for a limited entry permit, or (9) obtaining in the period December 5, 1990, through April 23, 1991, inclusive, a vessel from a person who would have been eligible for a limited entry permit under one or more of the criteria in paragraphs (e)(1) through (5) (Federal Code of Regulations §685.15), may be determined to be ineligible should the Western Pacific Fishery Management Council decide in the future to limit effort in the fishery.

Owners of vessels who enter the longline fisheries around Guam and American Samoa after December 6, 1990, and January 1, 1991, respectively, may be determined to be ineligible for future participation in those fisheries should the Western Pacific Fishery Management Council decide to limit effort in the fishery based in part on historical participation.

For further information contact: Pacific Area Office, NMFS;2570 Dole Street;Honolulu, Hawaii 96822; Telephone:(808) 955-8831

Appendix J.--PAO letter.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Area Office - Southwest Region
2570 Dole St. Honolulu, HI 96822-2396

December 10, 1990 F/SWR11:AZK

Dear Vessel Owner:

Enclosed is your Longline Fishing Vessel Permit for the western Pacific region. The permit is being issued under the authority of Federal emergency regulations which were approved by the Secretary of Commerce and published in the Federal Register November 27, 1990. These regulations will remain in effect until February 24, 1991 with the possibility of an extension for another 90 days.

Please note the following major requirements contained in the regulations: **fish catch and effort data** must be recorded daily by the vessel captain; completed catch and effort logsheets for each trip must be submitted to the National Marine Fisheries Service within 3 days following the landing of fish; the **vessel's official number** (18 inches high for vessels 65 feet and longer, 10 inches high for vessels less than 65 feet) must be affixed to the port or starboard sides of the deckhouse or hull; **notification must be provided to the Pacific Area Office (808-955-8831) for possible placement of observers on board vessels** intending to fish within 50 nautical miles off certain Northwestern Hawaiian Islands; and **vessels carrying observers must notify the U.S. Coast Guard** at least 24 hours prior to returning to port.

You are also advised that on December 5, 1990, the Western Pacific Fishery Management Council voted to establish a temporary moratorium (see enclosure) on the Hawaiian longline fishery. A request will soon be made to the Secretary of Commerce for approval to implement the moratorium. At this time, we do not know whether the moratorium will be approved or not, or when it will become effective if approved by the Secretary of Commerce. We suggest, therefore, that you make every effort to be kept informed on this matter.

If you have any questions regarding the emergency regulations, call me at (808) 955-8831. Please direct all inquiries on the moratorium to the Western Pacific Fishery Council office at (808) 523-1368.

Sincerely,

Alvin Katekaru

Alvin Z. Katekaru
Resource Management Specialist

Enclosures

Appendix K.--"Limited entry" permit.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

FEDERAL LIMITED ENTRY PERMIT

Hawaiian Islands Pelagic Longline Fishery

VESSEL: F/V ALOHA

PERMIT NUMBER: 100001

VESSEL OWNER: John Smith
OPERATOR(S): Henry Smith

Permit Expires: April 22, 1994

Issuing Officer:

for - E.C. Fullerton, Regional Director

Code of Federal Regulations §685.15 (56 FR 51849, October 16, 1991)

(e) Transfer.

(1) A limited entry permit is valid only for the vessel for which it is issued, except insofar as transferring a permit is allowed by this paragraph (e).
(2) A limited entry permit issued under §685.15(c)(1) through (7) can be transferred with the sale of the vessel for which it was issued only once after April 23, 1991. A limited entry permit issued under §685.15(c)(8) or (9) may not be transferred with the sale of the vessel for which it was issued.
(3) Notwithstanding the provisions of paragraphs (e)(2) of this section, the Regional Director, in consultation with the Council, may allow the transfer of a limited entry permit in cases of extreme hardship such as death or terminal illness preventing the vessel owner from participating in the fishery.
(4) A limited entry permit issued under this section may, without limitation as to frequency, be transferred by the permit holder to a replacement vessel owned by that person, provided that the Regional Director determines that the replacement vessel has a harvesting capacity that is comparable to the original permitted vessel. Vessel length, range, hold capacity, gear limitations, and other factors shall be considered in making determinations of the comparability of vessels' harvesting capacity.
(5) If a new owner of a permitted vessel wishes to have a permit issued in the new owner's name, the new owner must apply to the Pacific Area Office within 30 days of the effective date of this paragraph, or within 30 days of the change in ownership of a permitted vessel, as documented on a Coast Guard Certificate of Documentation or on state vessel registration records for an undocumented vessel, whichever is later. The new owner must at that time provide documentation of any changes in ownership of the vessel. The transferred permit is not valid until this process is completed.

(f) Partnership or Corporate Ownership and Transfer.

In addition to the other requirements of this section, the following provisions apply to a limited entry permit owned by or transferred to a partnership or corporation. (1) An application for a limited entry permit filed by a partnership or corporation must identify each owner's respective percentage share of the partnership(s) or corporations(s).
(2) A change of 50 percent or more of the ownership of a partnership or corporation will be considered a transfer. Layerings of partnerships or corporations will not insulate a permit holder from application of this limitation.
(3) If a limited entry permit is transferred to a partnership or corporation, the transferee(s) must provide satisfactory documentation of the transfer, including the name of each new owner and respective ownership share for each owner of the corporation or partnership obtaining the permit. The transferred permit is not valid until this process is completed.

Appendix L.--Notification of landings and transshipments in the western Pacific.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Area Office - Southwest Region
2570 Dole St. Honolulu, HI 96822-2396
PH: (808)955-8831 FAX: (808)949-7400

September 20, 1991

TO: LONGLINE VESSEL OWNERS/OPERATORS

SUBJECT: NOTIFICATION OF LANDINGS AND TRANSSHIPMENTS IN THE WESTERN PACIFIC (§685.13 Code of Federal Regulations)

Beginning September 30, 1991, all longline vessel operators will be required to call the Pacific Area Office at (808) 955-8831 within 12 hours of their vessels' arrival at any port in Hawaii, Guam, American Samoa, Northern Mariana Islands, or U.S. Pacific Island possessions.

Every operator must report:

1. Name of the vessel;
2. His or her name; and
3. Date and time of landing or transshipment of longline-caught fish made by the vessel since the previous report.

During weekends, holidays, and non-business hours reports will be taken via a telephone answering machine.

Failure to notify the Pacific Area Office may result in a fine of at least $250.00.

Appendix M.--"Pickup" list.

VESSEL LOGS STATUS FOR 09/25/91

LOGS FOR PICKUP

VESSELNAME	PIER	UNLOADED	TRANSACTION	CONTACT/TITLE
VESSEL A	17	09/25/91	P/U 9/25	CAPTAIN DOLLAR

LOGS TO BE MAILED IN

VESSELNAME	PIER	UNLOADED	TRANSACTION	CONTACT/TITLE
VESSEL B	17	09/21/91	left note	

DELINQUENT LOGBOOKS

VESSELNAME	PIER	UNLOADED	TRANSACTION	CONTACT/TITLE
VESSEL C	K	07/23/91	mailed in	
VESSEL D	35	08/02/91	" "	
VESSEL E	17	08/19/91	left note	
VESSEL F	K	08/27/91	" "	
VESSEL G	17	08/27/91	" "	
VESSEL H	17	09/18/91	" 09/18/91	

COMMENTS

VESSELNAME	PIER	TRANSACTION	CONTACT/TITLE
VESSEL I	37	Needs new logbook	

INITIALS OF FMRP STAFF MEMBER

Appendix N.--Inventory list.

VESSELNAME	SEP 3	SEP 4	SEP 5	SEP 6	SEP 9	SEP 10	SEP 11	SEP 12	COMMENTS
						---	---	___	
Ahi	17	17	17	---	---	---	---	___	
Ali B	---	---	---	---	---	---	---	___	
Alicia Mary	K	K	K	K	K	K	K	___	
Anna	K	K	K	---	---	---	---	___	
Anna Riley (2)	K	K	K	K	K	K	K	___	
Archer (2)	35	37	37	37	37	37	37	___	
Ataloa (Kauai)	---	---	---	---	---	---	---	___	
Audree Kristine	---	---	---	---	---	---	---	___	
B-52	---	17	17	17	17	17	17	___	
Balzon(BI)	---	---	---	---	---	---	---	___	
Barbara H	37	37	37	37	37	37	37	___	
Betty N	---	---	---	---	---	---	---	___	
Big Al	---	---	---	---	---	---	---	___	
Big Deal	---	---	K	K	K	K	K	___	
Blue Fin	---	---	---	---	---	---	---	___	
Blue Horizon	DD	K	17	17	17	---	---	___	
Blue Sea	17	17	17	17	17	17	17	___	
Blue Sky	K	K	K	K	K	---	---	___	
Bounty (2)	---	---	---	---	---	---	---	___	
Captain Diamond	---	---	---	---	17	17	17	___	
Captain Glynn I	---	---	---	---	---	---	---	___	
Captain Greg	---	---	---	---	---	---	---	___	
Captain Henry	17	17	17	17	17	17	17	___	
Captain John	17	17	17	17	17	17	17	___	
Captain Le	17	17	17	17	17	17	17	___	
Captain Millions	17	17	17	17	17	17	17	___	
Captain Millions I	---	---	---	---	---	---	---	___	
Captain Millions III	17	17	17	17	13	---	---	___	
Captain Millions IV	17	17	17	17	17	17	17	___	
Captain Peter	---	---	---	---	---	---	---	___	
Captain TNT(New Sea)	17	17	17	17	17	17	17	___	
Captain TX (Jag.Mar)	K	K	K	K	K	K	K	___	
Captain Van	17	17	17	17	17	17	17	___	
Captain Van I	17	17	17	17	17	17	17	___	
Caroline L	---	---	---	---	17	17	17	___	
Chris	---	---	---	---	---	---	---	___	
Cornucopia (2)	---	---	---	---	---	---	---	___	
Dae In Ho	K	K	K	K	K	K	K	___	
Dasher II (Cam. 88)	---	---	---	---	---	---	---	___	
Deborah Ann	K	K	---	---	---	---	---	___	
Dominis	---	---	---	---	---	---	---	___	
Dynamic	K	K	K	K	K	K	K	___	
ET^	K	K	K	K	K	K	K	___	
East Ocean	---	K	K	K	---	---	---	___	
Edward G	---	---	---	---	---	---	---	___	
Esther	---	---	---	---	---	---	---	___	
Esther I(Sea DragII)	17	17	17	17	17	17	17	___	
FORTUNA ^	---	---	---	---	---	---	---	___	
Finback	---	---	---	35	35	35	35	___	
Four C's ^(albacore)	---	---	---	---	---	---	---	___	
Full Moon	K	K	K	K	K	K	K	___	
Gail Ann	---	---	---	---	---	---	---	___	
Genesis	17	17	17	17	17	17	17	___	

Note: Numbers and letters indicate piers where vessels docked that day.

Appendix O.--National Marine Fisheries Service "mail-in" notice.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center Honolulu Laboratory
2570 Dole St. • Honolulu, Hawaii 96822-2396

TO _____:

A NATIONAL MARINE FISHERIES SERVICE REPRESENTATIVE CAME BY YOUR VESSEL TO COLLECT YOUR DAILY CATCH LOGS ON ___/___/___, AT ___:___. IF YOU HAVE NOT ALREADY MAILED IN YOUR LOGS, PLEASE DO SO IMMEDIATELY. FAILURE TO COMPLY WILL RESULT IN ENFORCEMENT ACTION AND A POSSIBLE FINE.

_____

NMFS REPRESENTATIVE

NOTE: IF YOU NEED A REPLACEMENT LOGBOOK, PLEASE CONTACT US AT 955-8831.

MAIL TO: NMFS-PAO
2570 DOLE ST.
HONOLULU, HI 96822

Appendix P.--Sample of completed longline log sheet.

TRIP # M 7777
MON. + YR/CAPTURE 2/91

DAILY LONGLINE FISHING LOG

Vessel XYZ #5 Permit No. 91-000 Date of Haul 2/4/91

Set: Time 1730 Location 22° 30' N - 158° 40' W
(Latitude/Longitude)

Haul: Time 0600 Location 22° 32' N - 158° 45' W
(Latitude/Longitude)

No. of Hooks Set 700 No. of Light Sticks Used 350 Surface Temp. 78.1

Species	Number Kept		Number Released	
	Tally	Total	Tally	Total
BILLFISHES Marlin, Blue	////	4		0
Marlin, Striped	++++ ////	9		0
Marlin, Black		0		0
Sailfish		0		0
Spearfish	//	2		0
Swordfish	++++ ++++ ++++ //	17	+++ /	6
SHARKS Blue		0	+++ ////	9
Mako		0	///	3
Thresher		0		0
Other		0		0
MISC. Mahimahi	+++ /	6		0
Moonfish		0		0
Wahoo	//	2		0
Other		0		0
TUNAS Albacore	/	1		0
Bigeye Tuna	+++ /	6		0
Yellowfin Tuna	//	2		0
Other		0		0

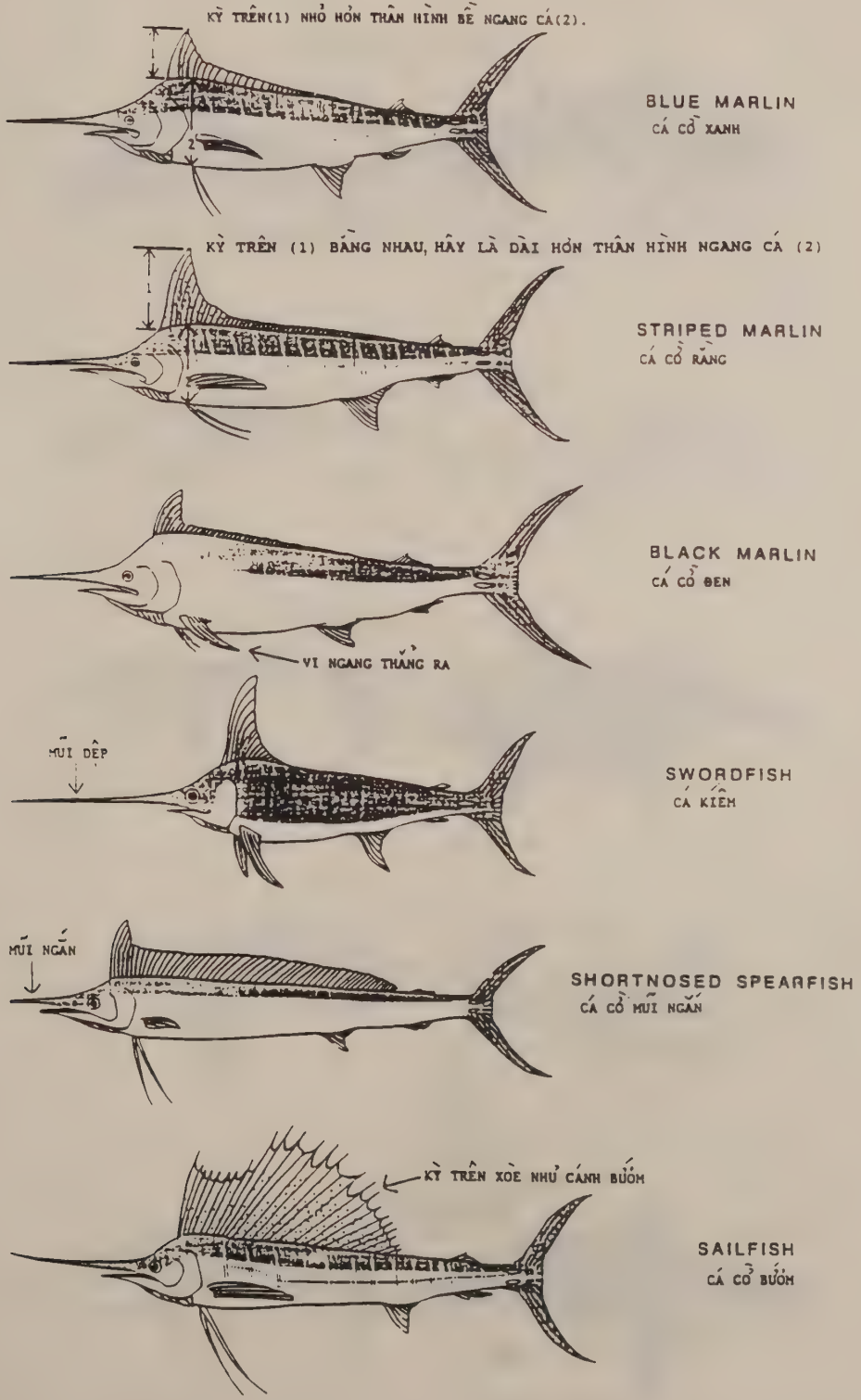
PROTECTED SPECIES INTERACTION OBSERVATION

SPECIES	SIGHTED IN AREA OF GEAR		RELEASED or LOST					
			ALIVE		INJURED		DEAD	
	Tally	Total	Tally	Total	Tally	Total	Tally	Total
Dolphin	///	3		0		0		0
Monk seal		0		0		0		0
False killer whale	//	2		0		0		0
Green turtle		0		0		0		0
Leatherback Turtle		0	/	1		0		0
Albatross	[redacted]		////	4		0	//	2
Booby				0		0		0
Others		0		0		0		0

I certify that the above information is complete and true to the best of my knowledge.

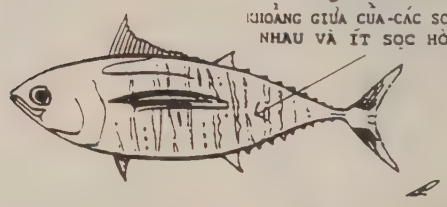
Captain [signature] Date 3/5/91

Appendix Q.--Pelagic species identification guide (Vietnamese).

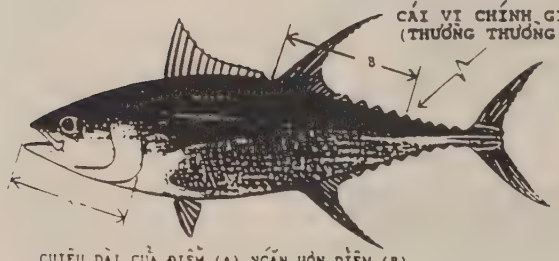


Appendix Q.--Continued.

BIGEYE TUNA
CÁ BIGEYE

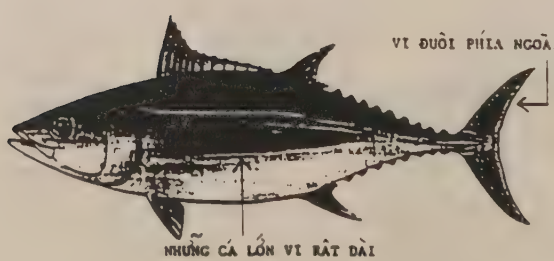


SMALL BIGEYE TUNA
CÁ NHỎ BIGEEYE



YELLOWFIN TUNA
CÁ YELLOWFIN

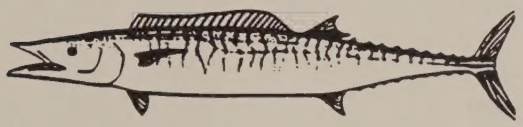
SMALL YELLOWFIN TUNA
CÁ NHỎ YELLOWFIN



ALBACORE TUNA
CÁ TUNA TOMBO

Appendix Q.--Continued.

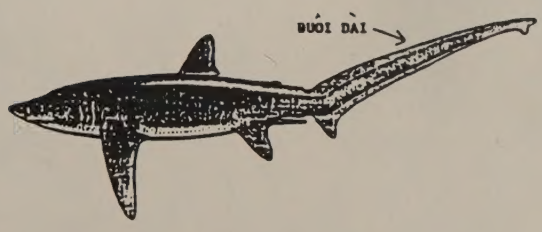
MAHIMAHI
CÁ BÙA



WAHOO
CÁ THU

BLUE SHARK
CÁ MẬP XANH

MAKO SHARK
CÁ MẬP MAKO



THRESHER SHARK
CÁ MẬP ĐUÔI DÀI